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AUTHOR Lindsay, Carl A.; Richard, G. Harold
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ABSTRACT

Adult continuing education instructional activities in higher education are and will continue to become even more difficult to describe and define. The Western Interstate Commission on Higher Education Program Classification Structure, designed to provide a consistent means of identifying and organizing the activities of higher education in a program-oriented manner, would be more useful for classifying adult continuing education offerings if it were supplemented by a taxonomy providing additional categories of information. Such an addition would make possible the analysis of instructional activities along eleven independent dimensions and a very large number of combinations of dimensions by cross classification, many of which would be useful to institutions for internal record keeping and external reports. (Author)

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TOWARD A TAXONOMY FOR CONTINUING EDUCATION INSTRUCTIONAL ACTIVITIES IN HIGHER EDUCATION

Carl A. Lindsay, Planning Studies
in Continuing Education
and
G. Harold Richard, University Management Information System

The Pennsylvania State University
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Toward a Taxonomy for Continuing Education Instructional Activities in Higher Education

Carl A. Lindsay, Planning Studies in Continuing Education
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G. Harold Richard, University Management Information System

The Pennsylvania State University

In thinking about the development of a taxonomy for adult/continuing education (ACE) activities in higher education, it becomes clear very quickly that such a task involves an attempt to lend structure to an unstructured situation. The scope or definition of ACE activities in higher education institutions, while never clearly separated from resident education instructional activities, is and will continue to become even more difficult to apprehend as the challenges of currently popular notions such as external degree programs, non-traditional study, life-long learning models, and other calls for innovation, are undertaken by the higher education community. Floyd B. Fischer, Vice President for Continuing Education of The Pennsylvania State University, recently highlighted the problem in a different context.

> As never before, the terms 'university extension' and 'continuing education' in one form or another are becoming household words throughout America. The spotlight has zoomed in upon us and upon the concepts and ideals for which we have struggled so long. ...higher education is attempting to make its programs conform to the real needs of people rather than make its students conform to the patterns and methods of traditional study. It is achieving a flexibility that is based on providing instruction when, where, and how it can be most effectively used. (1972, p. 6,7)

The scope and flexibility of educational activities for adults was put in the broadest possible context recently by Stanley Moses of the Educational Policy Research Center of Syracuse University. Taking the concept of the

"Learning Force" as "the total number of people developing their capacities through systematic education; that is, where learning is aided by teaching and there are formal, organized efforts to import knowledge through instruction" (Betram Gross, as quoted by Moses, 1971, p. 14), Moses divides the total number of people participating in educational activity into two groups--the Core and the Periphery. The number of participants in the Core and its definition are provided by the regular statistical reports on the educational system (i.e., participation in elementary, secondary, and higher education) issued by the U. S. Office of Education since 1870. Moses estimates a total of 59.6 million participants in the Core for 1970 (1971, p. 7). On the other hand, the Periphery includes educational activities offered in all places where adults are employed: industry, business, the military, civilian government; it includes programs sponsored by private associations, national welfare organizations, professional training societies, as well as specialized programs for adults carried on in regular (or Core-type) educational institutions. Also included in the Periphery are programs conducted by proprietary and correspondence schools, and programs of organized instruction through educational television.

Moses points out that the complexity and variety of the Periphery and the lack of attention by public information agencies results in a "great gap between the accuracy of our knowledge about the Core and Periphery!" Individuals concerned with collecting information about a small slice of the Periphery, ACE participation in colleges and universities, can attest to the accuracy of this observation. Nevertheless, surveys are conducted and estimates of educational participation in the Periphery are made. It is

interesting to note that participation in the Core (59.6 million) and the Periphery (60.3 million) for 1970 are almost identical according to Moses.

Fortunately, some attention and effort are finally being focused on educational participation in the Periphery, at least that part of it of most concern to individuals in continuing education or extension. Largely through the pioneering efforts of the Adult and Vocational Education Surveys Branch of the National Center for Educational Statistics, especially those of Florence Kemp and Imogene Okes, periodic surveys are being made of adult participation in continuing education activities of colleges and universities and in the public education system of the states. Kemp (1970) reports approximately 5.6 million registrations in noncredit activities in higher education institutions for 1967-68, and Okes (1972) reports almost 2 million adult education registrations in the United States Public Education System for 1969-70. A figure of 10 million ACE registrations for 1970-71 in the formal educational system (elementary, secondary, higher education) cateogry of the Periphery is probably a generous estimate. However, this is less than one-sixth of the estimated total educational participation in the Periphery, the broad context of adult education activities. (Moses, 1971, p. 19)

Can we come to grips with, describe, and define, adult/continuing education activities in a more restricted environment--that which occurs in the formal education system? There are many demands made for the number and characteristics of participants, types of programs, and related information by Federal, State, and local governments, professional organizations, researchers and others. Surveys are being completed and information requests are being filled. Thus, in a large sense, activities in adult/continuing

education are being defined through external information reports and surveys. However, it is obvious that such a piece-meal approach is unsatisfactory for a number of reasons. Definitions of what is adult/continuing education vary; different surveys have different data bases and levels of detail; etc. Comparison of, for example, participation rates over time or by region is impossible, and interinstitution information exchange about ACE activities is difficult.

It is perhaps symptomatic of the flux and flexibility which is characteristic of the ACE field that a USOE-funded project to "organize and define the terminology of adult/continuing education" and "to develop a preliminary manual of terminology" was unsuccessful. Due to a host of problems, outlined in the project report (Gideon et al, 1971), a less ambitious goal was realized--"to suggest a structure for such a manual and to develop and test a developmental process for achieving that outcome." The primary motivation for the ACE manual and the present paper are identical, although the scope of this paper is much more modest. Both are concerned with developing the basis for an information system about ACE instructional activities that can be used for internal (within institution) and external requirements for management and reporting. However, it is significant that a proposed chapter in the Gideon manual, "Collecting and Using Information about Adult/Continuing Education," which would have dealt with a classification structure for ACE activities (the concern of this paper) was not even attempted.

In a foreword to the Gideon report, W. Dale Chismore, of the U. S. Office of Education, notes that the lack of a common and acceptable terminology about adult/continuing education limits both the quantity and quality of data

that can be collected and disseminated. He recommends more research, dialogue among adult educators, and a cooperative effort, to develop a useful handbook of standardized terminology about adult/continuing education. We subscribe to the present need for a handbook of standardized terminology for adult/continuing education; indeed, the need exists for a terminology handbook for all higher education instructional activities. We offer the proposed taxonomy of adult/continuing education instructional activities in higher education institutions as part of the recommended dialogue. The intent of the taxonomy is to provide a rational basis for developing an enrollment information system for ACE instructional activities in higher education institutions and for surveys of such activities. In the remainder of the paper, we discuss what is meant by a taxonomy, give several examples of taxonomies, examine the Western Interstate Commission on Higher Education "Program Classification Structure" (PCS), propose a taxonomy based on the PCS, give several examples of instructional programs classified by the taxonomy, and comment on the taxonomy's potential usefulness.

Taxonomies

A taxonomy is primarily a useful way of classifying things, be they books, plants, people, concepts, or ideas. It is a way of simplifying and organizing a particular content universe to make it easier to deal with, both conceptually and practically. Any classification scheme is to some degree arbitrary, for example, the books in a library. They can be sorted on the bais of size to fit particular shelves, or on the basis of color to create aesthetic effects. Taxonomies may be purely descriptive or they can

represent, as does the periodic table of the elements, a useful theory about the nature of matter.

How does one develop a taxonomy? Historically, the methods used by biology seem to be observation and good judgment. Through extensive field work Linnaeus developed a classification of plants based on characteristics of stamens and pistils. His intent was to find a classification of plants that would reflect their evolutionary development. The evaluation of a plant taxonomy from this point of view requires information based on fossil remains, geographical distribution, chromosomal and biochemical relations, as well as morphological features.

Taxonomies for areas other than biology, of course, are developed for different reasons and their usefulness, completeness, and consistency are judged on different bases. For example, Frederikson (1972) has suggested that the behavioral sciences need a taxonomy of situations to examine the role of situations in determining behavior. Bretz (1970) has proposed a two-dimensional classification scheme for communication media to aid those who must make decisions concerning the use of new technologies.

In the field of adult education, Verner (1962) undertook the ambitious tasks of precisely defining adult education as a field of knowledge, and of specifying learning activities in which adults engage that logically can be included in the field. Part of his monograph included a typology of the relation of adult education to institutional function, and a basic distinction between the methods and techniques of adult education. He further clarifies the distinction between method and technique by proposing a classification scheme for each. Content or subject matter is a commonly used method

classifying adult education and Lord (1972) has proposed a scheme for cateogrizing non-credit continuing education programs in colleges and universities. Lord's scheme, which is based on classifying programs according to their principle thrust, seems to be broad and flexible. It, however, is addressed to only one dimension of content. On the other hand, Verner's scheme, intended principally as a theoretical or conceptual statement, lacks the detail that is necessary for a useful taxonomy.

How, then, did we go about developing the taxonomy proposed in this paper? We first examined what had been done, in a taxonomic sense, for higher education instructional activities. The WICHE Program Classification Structure (PCS) (Gulko, 1970) seems to be the most comprehensive source of information on this area at the present time. It is discussed in the next section of this paper. We also summarized what the current external information requirements are for ACE instructional activities by examining past and present HEGIS and other external enrollment information reports, including the AUEC-NUEA Programs and Registration Report. The next step was to match the instructional activity information requirements from the external enrollment informations reports with the potential information provided by the WICHE PCS. The overall conceptual basis of the WICHE PCS plus the information required by the HEGIS and other reports but not covered by the WICHE PCS, is the point of departure for the proposed taxonomy.

The taxonomic basis of the WICHE PCS provides a framework, with varying levels of aggregation, for identifying and organizing the various programs that represent the goal-oriented activities of institutions of higher education. However, since the PCS is a generalized structure intended, among other objectives, to promote the exchange of comparable data on programs and costs among institutions of higher education, it does not attempt to define

"program elements," the lowest level of aggregation in the taxonomy. Rather, it expects that program elements will be institutionally-defined and aggregated to programs for management and information exchange purposes. Unfortunately, HEGIS and other surveys of adult/continuing education require much more detail than those of resident instruction activities. In other words, ACE instructional activity information must be reported at the program element level. It is apparent that unless the WICHE taxonomic structure is extended to the program element level, and is reviewed, revised, and eventually adopted by higher education institutions conducting ACE activities, current problems with the HEGIS and other surveys of ACE enrollments will not be ameliorated or solved. Although the PCS seems to be more oriented toward resident education than continuing education activities, both are equally neglected at the program element level. Use of the word "neglect" is not intended as a criticism of the PCS, due to its generalized nature. The intent is to point out the importance of program element definition, especially with regard to ACE activities, given their diverse nature.

The WICHE Program Classification Structure

The WICHE PCS was developed to provide a consistent means of identifying and organizing the activities of higher education in a program-oriented manner. The PCS is a multi-level structure that permits aggregation of program information on six basic levels:

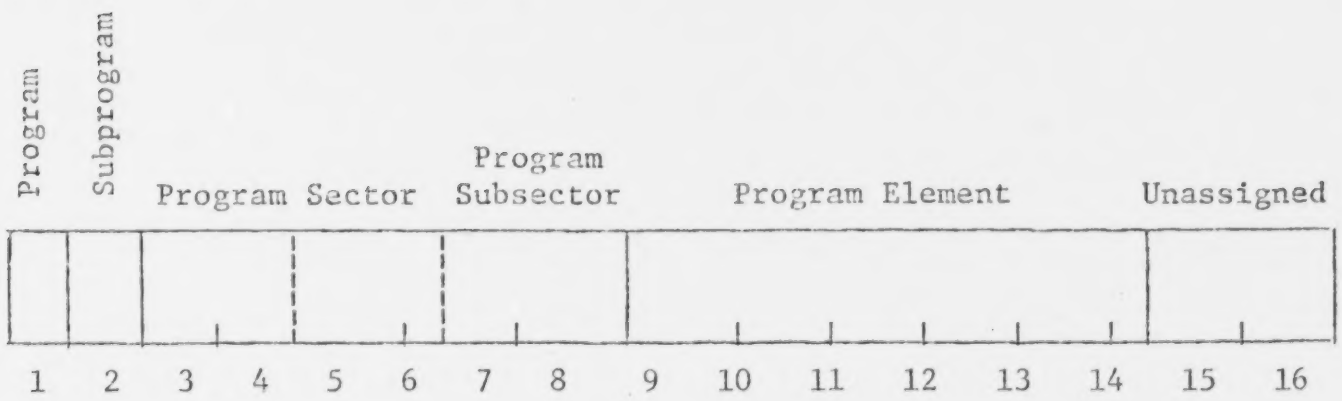
a. Program
b. Subprogram
c. Program Category
d. Program Sector
e. Program Subsector
f. Program Element

The organizational unit for the PCS is the CAMPUS, consisting of Primary and Support programs for the purpose of associating resources with programs and outputs. PROGRAM represents the major institutional missions and related support objectives, e.g., instruction, organized research, public service, student service. PROGRAM objectives are described by a number of sub-objectives, represented by the SUBPROGRAM, such as regular instruction, departmental continuing education. PROGRAM CATEGORY is an implicitly defined, by the HEGIS Taxonomy of Instruction Programs for Higher Education (Huff and Chandler, 1970), aggregation of Program Sectors (subject matter designations) which may be used to sum related elements across program lines. For example, all activities dealing with Agriculture and Natural Resources are coded 01. The PROGRAM SECTOR is a collection of homogeneous program elements, or specialties, within a program category, such as Animal Science or Dairy Science within Agriculture. PROGRAM SUBSECTOR refers to a subset of program elements within a program sector. For resident education activities, it is designed primarily to identify the course level for Instruction Program Elements, e.g., lower division, upper division. For Public Service or CE activities, the program subsector is intended to classify clientele or audience groups.

PROGRAM ELEMENT represents an activity or sets of activities, such as a particular course, which contribute directly to the program objective in a measurable fashion and is the lowest order of aggregation for data in the PCS.

The heart of the PCS is a sixteen character coding structure reproduced below.

The PCS Sixteen Character Coding Structure



The PCS represents the coding structure for PROGRAM, SUBPROGRAM, PROGRAM SECTOR, and PROGRAM SUBSECTOR, or digits 1-8 of the coding scheme. The other eight digits, or the coding structure for PROGRAM ELEMENTS, and the last two digits are to be institutionally-defined, i.e., each institution is to develop its own coding structure according to its own dictates. The taxonomy proposed here is addressed to an extension of the WICHE PCS at the PROGRAM ELEMENT level and to the general problem of organizing and classifying continuing education instructional activities in higher education.

The Proposed Taxonomy

In the present context, it is important to distinguish between a taxonomy of attributes of people (students) and a taxonomy of programs (instructional activities). We do not believe the two (attributes of students and programs) can be mixed. A taxonomy of instructional activities is not concerned with the attributes of individuals such as age, sex, status, etc., who are participating in the instructional activities, the interaction between attributes of individuals and instructional activities, nor any particular institutional or organizational structure which may deliver the instructional activities.

Taking a cue from the Gideon report, it also is important to note that we do not attempt to resolve the definitional problems that beset the instructional activities of continuing education as well as of resident instruction. The proposed taxonomy uses the current vocabulary, as it is commonly understood in higher education institutions, for CE instructional activities and leaves the application of the terms to the user. However, it is probable that a complete and logically consistent taxonomy may help to clarify certain problems of definition, even though it is equally likely that it will raise additional problems. We do not lightly dismiss definitional problems, but feel they are beyond the scope of this paper and more properly the topic of another, considerably longer paper.

For ACE instructional activities, we propose an additional six dimensions to the WICHE PCS. Strictly speaking, only four of the six dimensions are taxonomic in the WICHE PCS sense, in that classification and aggregation are implied. The four taxonomic dimensions in their implied order of aggregation are (a) credit applicability, (b) level of instruction, (c) format or type of activity, and (d) primary instructional delivery system. The other two dimensions, contact or equivalent contact hours and location of activity, are mainly descriptive, but equally as important as the other ones.

To recapituate, we are suggesting that the WICHE PCS is not complete enough (nor was it intended to be) to categorize ACE instructional activities in higher education and to provide a basis for ACE enrollment systems and reports. We propose that six additional dimensions, discussed below, be added to the WICHE PCS, at the program element level, to develop a taxonomy that will adequately describe, for the present time, the diverse instructional activities of continuing education.

Credit applicability. Does the instructional activity generate "credit"? If yes, is the credit applicable toward a degree granted by the institution. Reference here is not made to the status of students taking the instructional activity. That is to say, a credit course is a credit course regardless of who is taking it. As we indicated earlier, a consistent taxonomy of attributes of instructional activities cannot be developed if attributes of individuals taking the programs are taken into account. If an activity does not generate either degree credit or nondegree credit, then it is a noncredit activity.

Level of instruction. This dimension refers to the presumed level of instruction of the activity as defined by the institution's scheme for categorizing and sequencing its instructional offerings. Again, it does not depend on the status of individuals receiving the instruction. We do not subscribe to the HEGIS (OE Form 2300-8) convention or definition which states, "whenever a course of instruction qualifies for both undergraduate and graduate credit, classify the course as graduate only if the majority of students are usually graduate." Such a convention is temporal, ambiguous, and subverts the original intention of classifying instructional programs by level of instruction.

Format or type of activity. We refer here to how the instructional activity is organized for delivery to the student. For example, is the format a formal course for a collection of students, that may meet regularly at fixed times over an extended time period with assignments, laboratories, etc., or is its organization based on a scheme which individualizes the instruction for each student? Other organizational modes or formats are possible, of course, and are listed in the next section under the categories of this dimension.

Primary instructional delivery subsystem. This dimension refers to how the instruction is delivered to the student. It should not be confused with the format or organization of the instructional activity. For example, a formal course, which is a way of organizing instructional activities, can be delivered through the classroom or face-to-face lectures, closed circuit TV, or a computer aided instruction (CAI) system. We also have the problem of instruction being delivered through several subsystems for a given activity. However, one subsystem is usually paramount, and hence we refer to the primary delivery subsystem.

We feel that failure to distinguish between an instructional activity format and its delivery subsystem, as does the HEGIS survey of Adult/Continuing Education Activities in Higher Education (OE Form 2300-8), is a major source of confusion at the present. And the confusion can only get worse as we contemplate the wide adoption of instructional technology in delivering instruction, the development of "external" degree programs, and other innovations in continuing education.

Contact or equivalent contact hours. This dimension is perhaps the key to resolving problems associated with instructional outputs generated by adult/continuing education instructional activities. Such outputs are typically described as "equivalent students" or "equivalent student credit hours" for noncredit activities while ACE credit activities are aggregated in the same manner as resident instruction activities. The generation of such outputs for CE activities is usually a difficult and time-consuming process done with much soul-searching after the programs have been conducted.

There has been a recent interest in and acceptance, in some areas, notably the Southern Association of Colleges and Schools, of the Continuing

ABSTRACT

Adult/continuing education instructional activities in higher education are and will continue to become even more difficult to describe and define. The Western Interstate Commission on Higher Education Program Classification Structure, designed to provide a consistant means of identifying and organizing the activities of higher education in a program-oriented manner, would be more useful for classifying adult/continuing education offerings if it were supplemented by a taxonomy providing additional categories of information. Such an addition would make possible the analysis of instructional activities along eleven independent dimensions and a very large number of combinations of dimensions by cross classification, many of which would be useful to institutions for internal record keeping and external reports.

Education Unit (CEU) as a measure of noncredit activities. Most of the problems with the determination of "credit" are due to differing definitions of credit and to the fact that there is no common denominator or yardstick for counting the "value" of all CE instructional activities. We propose to extend the CEU notion and take the number of contact or equivalent contact hours, generated by an instructional activity, as the basic unit of "value." Contact hours can be converted into CEU's credit hours, or "equivalent credit hours," by direct transformation since all three units are defined on the basis of contact classroom hours. Equivalent contact hours can be developed for activities such as correspondence study or individualized instruction. The point is that with a common denominator (contact hours) for each instructional activity, it is possible--provided the activity has been categorized on a credit applicability dimension--to construct "credit" hours, or "equivalent credit" hours, or any other derived measure, to describe the credit-generating dimension of an activity for internal and external reports, or for other purposes.

Location. Since continuing education or extension is involved to a large degree in "extending" or taking the resources of an institution to the people, it is frequently desirable to know where a given instructional activity was conducted. The location of an activity is useful for planning, internal management, and publicity purposes. No categories are proposed for this dimension, of course, because the location of an instructional activity has to be uniquely defined for a given institution.

The six additional dimensions of the proposed taxonomy and their categories are shown below.

Dimension	Code	Category
A. Credit Applicability	1.	credit, degree
	2.	credit, non-degree
	3.	noncredit
B. Level of Instruction	1.	unassigned
	2.	remedial (preparation)
	3.	undergraduate 1 (lower division)
	4.	undergraduate 2 (upper division)
	5.	graduate
	6.	other
C. Format or Type of Activity	1.	formal course
	2.	informal (short) course
	3.	unit course
	4.	conference, institute, workshop
	5.	lecture series
	6.	correspondence study
	7.	other
D. Primary Instructional Delivery Subsystem	1.	classroom or face-to-face lecture
	2.	independent study
	3.	TV, closed circuit
	4.	TV, broadcast
	5.	audio, closed circuit
	6.	audio, broadcast
	7.	CAI, fixed
	8.	CAI, mobile
	9.	mixed media
	10.	exhibits, performance, demonstration (art, music, equipment)
	11.	other

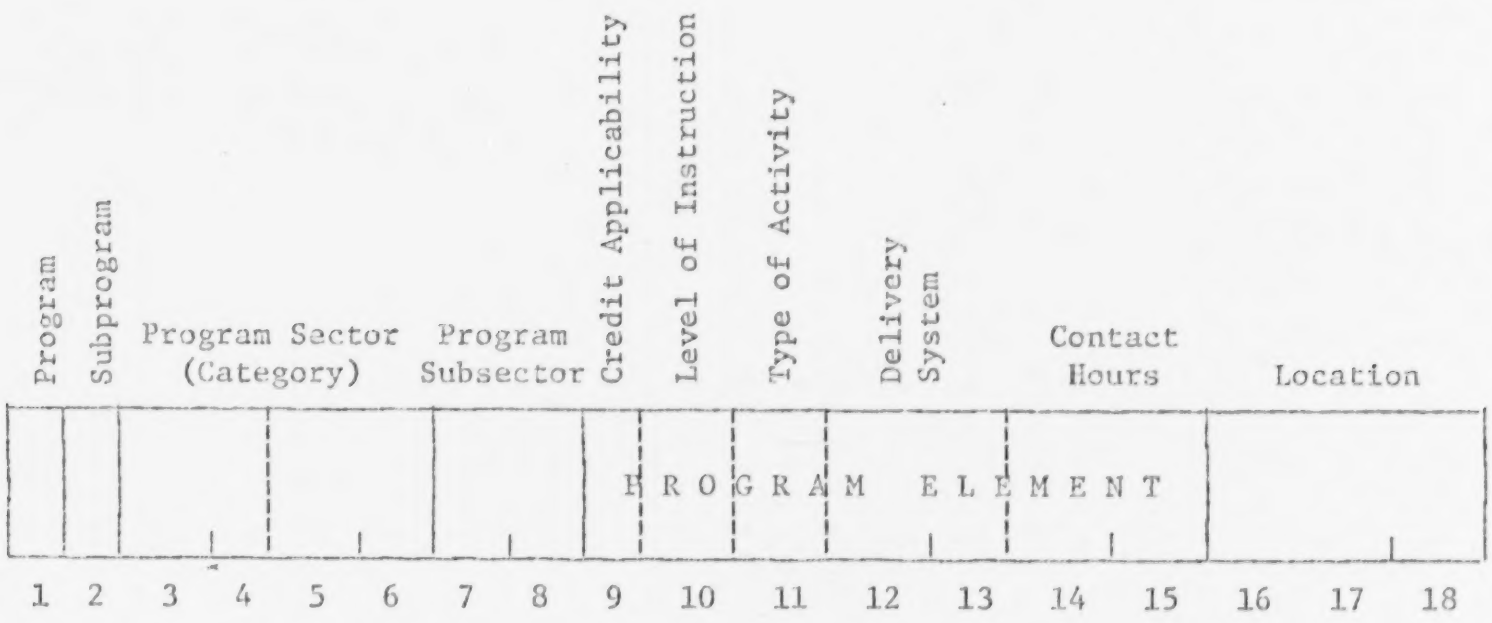
E. Contact or Equivalent Contact Hours--actual planned contact hours generated by the activity in clock hours, i.e., one hour equals 60 minutes, rounded to the nearest hour.

F. Location of Activity--three digit code for town, area, or other subdivision where activity is conducted.

The proposed addition to the PCS taxonomy requires 10 digits. Added to the WICHE PCS assigned 8 digits, the total required for coding is 18, instead of the original 16. The eleven dimensions of the taxonomy are implicitly defined by their location in the coding structure. Codes are the numbers

assigned to represent the categories of the taxonomy dimensions.

Revised 18 Digit Coding Structure



An Easy Example

Recently, Secondary Education 497, Using Tests Intelligently, was offered on WPSX-TV, the educational television station of The Pennsylvania State University at University Park, Pa. It was an upper division level, three-credit course, aimed primarily at teachers. This particular course would be categorized under the revised taxonomy's 18-digit coding structure as follows:

PCS Digit Number	Dimension Name	Dimension Number	Code	Category or Meaning
1	Program	1	1	Instruction[1]
2	Subprogram	2	3	Extension Instruction for Credit
3-4	Program Category	3	08	Education[1]
5-6	Program Sector	4	25	Educational Testing[1], Evaluation, and Measurement
7-8	Program Subsector	5	70	Common Interest Group[2] (teachers)
9	Credit Applicability	6	1	Credit, degree[3]
10	Level of Instruction	7	4	Undergraduate 2 (upper division[3])
11	Format or Type of Activity	8	1	Formal Course[3]
12-13	Primary Delivery Subsystem	9	04	TV, Broadcast[3]
14-15	Contact Hours	10	37	This 3-credit course generated 37.5 contact hours at The Pennsylvania State University[3]
16-18	Location	11	001	University Park, Pa.[3]

Thus, the complete tag for this course under the proposed taxonomy would read: 130825701410437001.

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[1] From categories of the WICHE PCS. The application of the HEGIS PCS Codes and especially the HEGIS Taxonomy codes requires an understanding of the instructional activity content.

[2] From an exhaustive list of audience codes.

[3] From the proposed addition to the WICHE PCS.

A More Difficult Example

The Department of Independent Study by Correspondence at The Pennsylvania State University offers a series of courses, called the Automatic Sprinkler Apprentice Program (ASAP) designed to upgrade the skills of apprentices who belong to various unions throughout the United States. Successful completion of ASAP courses is required before an apprentice can move through apprenticeship to journeyman ranks. We would code a program called ASAP-1 as follows under the complete taxonomy.

Digit Number	Dimension Name	Dimension Number	Code	Category or Meaning[4]
1	Program	1	3	Public Service
2	Subprogram	2	1	Departmental Continuing Education
3-4	Program Category	3	53	Mechanical and Engineering Technologies
5-6	Program Sector	4	17	Construction and Building Technologies(carpentry, electrical, plumbing, sheet metal, air conditioning, heating, etc.)
7-8	Program Subsector	5	89	Union, Apprentice
9	Credit Applicability	6	3	Noncredit
10	Level of Instruction	7	1	Unassigned
11	Format or Type of Activity	8	6	Correspondence Study
12-13	Primary Delivery Subsystem	9	02	Independent Study
14-15	Contact Hours	10	42	Presumed Contact Hours Assigned to This Course
16-18	Location	11	001	University Park, Pa.

The tag for ASAP-1 is 3153178931602420 01.

[4] The same footnotes apply as given in the previous example.

Other examples could be given--some, no doubt, even more difficult to code or categorize than the examples cited. We should emphasize again that neither the proposed taxonomy, nor any other taxonomy for that matter, can be automatically or blindly applied to instructional activities. Seasoned and reasoned judgment, coupled with a detailed understanding of the taxonomy and the instructional activities of a given institution, are required.

So far then, we have outlined a taxonomy for CE instructional activities that seems to be complete and consistent. What about enrollment reports? How do they fit in?

Instructional activities generate enrollments. Simply stated, enrollments are brought into the picture by associating them with instructional activities. We now examine how this can be done and comment on the potential usefulness of the taxonomy.

Potential Usefulness of the Proposed Taxonomy

This paper could have been titled, "Toward a Taxonomic Basis for Continuing Education Enrollment Information Systems." And indeed, we did state that the primary intent of the paper is to provide a rational basis for developing enrollment information systems in higher education institutions and surveys of such activities. The foregoing has been an attempt to fulfill the stated intent by categorizing attributes of instructional activities. On the same general level we will discuss the potential usefulness of enrollment information systems based on the proposed taxonomy.

Conceptually, and for report and management purposes, an enrollment is simply a weighting factor to be applied to a given instructional activity. Let us say that we have a record, with the 18 digits from the first example,

that can be read by a computer, that we have a computer, and a program for manipulating the record. And for the sake of generality, let us assume that we have a large file of such records that have been developed by categorizing our CE instructional activities. What can we say about enrollments or registrations? Nothing. No weighting factor (enrollments) has been associated with the activity. But we can examine in great detail our instructional activities. The taxonomy allows us to analyze instructional activities along eleven independent dimensions and a very large number of combinations of dimensions formed by cross-classifying the different dimensions. For example, how many degree credit courses were offered through broadcast TV? Answer, cross-classify the records on dimensions 6 (credit applicability) and 9 (primary delivery subsystem). How many credit, graduate level courses were offered to teachers through correspondence? Answer, cross-classify the records on dimensions 6 (credit applicability), 7 (level of instruction) and 9 (primary delivery subsystem).

If we also code on each of our hypothetical records another number, representing the enrollment for the activity, in effect weighting each activity, then we can analyze our enrollment activity and have the beginnings of an enrollment information system. Now, for example, instead of asking how many degree credit courses were offered through broadcast TV, we can ask how many students were enrolled (or completed, depending on the accuracy and completness of the enrollment system) in broadcast TV, how many credit hours were generated, and how many fulltime equivalent (FTE) students are represented. Examples of questions that could be asked are almost endless. Parenthetically, this potential capability is not wasted because the number of questions about enrollments that can be asked by surveys is also endless.

The enrollment information system we have been discussing is still not complete. It is a generalized system useful for generating external enrollment information reports, but it lacks a number of other dimensions needed for generating internal management and enrollment information for a given institution's use. To individualize the system for a particular institution, dimensions must be added to take into account the institution's administrative structure, course codes, etc.

For example, in large institutions, the system would need an administrative unit or budget code. Institutions operate on course or activity names, not HEGIS Taxonomy codes. Again, for large institutions we may wish to categorize an activity by the college which conducts or sponsors it. Activities or courses typically have a semester or term designation, or a beginning and ending date. We may wish to know not only the total enrollment for an activity, but also the male and female enrollment.

If codes for these internally-defined dimensions are added to our hypothetical record, it can be seen that we have a reasonably complete enrollment system. It can also be tied into the financial operations of the institutions through the administrative unit/budget code, can be used for planning, budgeting, and costing instructional activities, and for a number of other internal management purposes.

Accountability and Productivity

Higher education, including continuing education or extension, has been and will continue to be faced with the challenges posed by the two notions of accountability and productivity. There is probably no educational concept in recent memory that has more surplus meaning than accountability, and numerous

writers (e.g., Mortimer, 1972; Alkin, 1972; Glass, 1972) are attempting to come to grips with this elusive term. Most writers agree, however, that part of accountability in higher education involves an assessment of institutional effectiveness either through an input-output model or by an examination of how well stated goals are met. Although it is possible to discuss and define accountability without direct reference to the notion of productivity, this concept is implicit in most definitions, e.g., the objective of accountability is to relate results to resources and efforts in ways that are useful for policy making, resource allocation, or compensation (Lieberman, 1970); "Accountability is a policy declaration adopted by a legal body such as a board of education or a state legislature requiring regular outside reports of dollars spent to achieve results." (Lessinger, 1971, p. 62) The close relationship of accountability and productivity has also been noted by Toombs. "Two ideas lie close to productivity, unit costs on the one side and accountability on the other." (1973, p. 5) In a very broad sense, accountability deals with what higher education is doing for whom and productivity refers to how well or economically it is being done.

In a fascinating and scholarly treatment of productivity in higher education, Toombs (1972) detects three main notions of productivity: that of a whole educational system in terms of its effects upon a national economy; faculty productivity, assessing either their contributions to the instructional process or their individual professional accomplishments; and institutional productivity, dealing with instruction-related outcomes such as degree output, non-instructional outcomes (e.g., public service, research), and student related outcomes. Note that each notion refers to an output--

effect upon the economy, or outcomes. It is clear that higher education must increasingly attend to its production or output function (cf. Lawrence et al, 1970, Outputs of Higher Education). This is not to suggest that Toomb's conclusion about productivity is invalid.

> ...productivity in its usual formulation, the ratio of input to output, is becoming less and less useful, less and less meaningful as an indicator of university performance. ...Such a condition has come about because the university in America and elsewhere is moving rapidly from what might be called a 'production mode' to a 'planning mode.' ...The planning mode, as represented by PPBS (program planning and budgeting systems), twenty-year horizons, alternate futures, or other vehicles, forces the consideration of most of the elements of production in advance.... Effectiveness is now represented by the degree to which the university achieves its own goals. (1972, p. v, vi)

Selling the publics served by the university on a "planning mode" approach to effectiveness may be a difficult matter, as Toombs points out. Nevertheless, the need for "production mode" indices of university performance remains, both for internal management information to enter into a "planning mode" and for interinstitutional exchange of comparable inputs and outputs. It can be seen that a comprehensive and agreed-upon data base is a necessity before PPBS, cost/benefit analysis, and cost exchange procedures can become commonplace in higher education.

The time is now ripe for increased dialogue about the field of adult/continuing education in higher education. We have tried to suggest that recent developments have increased the urgency of structuring our unstructured environment and have tried to place the proposed taxonomy in an appropriate context. We are somewhat troubled by the need for a handbook of adult/continuing education or a taxonomy of adult/continuing education instructional

activities for higher education when the problems are much broader. It is quite possible, given the rapid growth and changes that have occurred in university continuing education or extension over the past 15 years, the new educational developments in higher education, and the long-term implications of the programs and projects of organizations such as the National Center for Higher Education Management Systems at WICHE, that the "production mode" indices of university resident and continuing education are not qualitatively different. Further, that we can begin thinking of students qua students, not resident instruction students, adjunct students, degree-candidate students, continuing education students, etc. If we do this, then we can agree with Fischer (1972) that we need to talk about only two kinds of students--the full-time and part-time. One instructional delivery system is needed for each, but the various teaching methods, techniques, testing and other instructional practices and procedures are as appropriate for one as the other. And we would add that a single instructional activity taxonomy can and should be developed for both.

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